AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the present application.

1. (currently amended) A method for making a metal carbide supported polycrystalline diamond (PCD) compact having improved abrasion resistance properties, said method comprises the steps of:

a) providing a cell assembly comprising:

a body of diamond crystals comprising a bimodal mixture of about 60 ~~wt~~ wt. % to about ~~90~~ 80 wt. % of a coarse fraction having an average particle size ranging from about 15 to 70 μm and a fine fraction having an average particle size of less than about one half of the average particle size of the coarse fraction; and

a support body disposed adjacent said body of diamond crystals, said support body comprising a mixture of a carbide of Group IVB, VB, or VIB metal and at least a sintering binder-catalyst in an amount of about or less than ~~20~~ 16 vol. % of the total weight of the support body; and

b) subjecting said cell assembly reaction to high pressure high temperature (HP / HT) conditions for a sufficient amount of time and at a sufficiently high temperature and high pressure to sinter said body of diamond crystals into a PCD layer and to bond said PCD layer to said carbide body.

2. (currently amended) The method of claim 1, wherein the weight ratio of the coarse fraction to the fine fraction of said body of diamond crystals ranges from about ~~90:10~~ 80:20 to 60:40.

3. (previously presented) The method of claim 1, wherein the fine fraction of diamond crystals ranges in size from about 1 to 25 μ.

4. (previously presented) The method of claim 1, wherein the cemented metal carbide support comprises a carbide of Group IVB, VB, or VIB metal, and the binder is one or more of cobalt, nickel, iron, or alloys thereof.

5. (previously presented) The method of claim 5, wherein the cemented metal carbide support is WC and the binder is Co.

6. (cancel)

7. (previously presented) The method of claim 1, wherein HP/HT processing conditions comprising sintering of said body of diamond crystals for about 3 to 120 minutes at a temperature of at least 1000° C and a pressure of at least 20 Kbar.

8. (currently amended) A sintered supported polycrystalline diamond (PCD) compact having improved abrasion resistance properties, said compact comprising:

(a) a body of diamond crystals comprising a bimodal mixture of about 60 ~~wt~~ wt. % to about ~~90~~ 80 wt. % of a coarse fraction having an average particle size ranging from about 15 to 70 μm and a fine fraction having an average particle size of less than about one half of the average particle size of the coarse fraction; and

(b) a support body in contact with the body of diamond crystals, the support body comprises a mixture of a carbide of Group IVB, VB, or VIB metal and at least a sintering binder-catalyst in an amount of about or less than ~~20~~ 16 vol. % of the total weight of the support body.

9. (currently amended) The PCD compact of claim 8, wherein the weight ratio of the coarse fraction to the fine fraction of diamond crystals ranges from about ~~90:10~~ 80:20 to 60:40.

10. (previously presented) The PCD compact of claim 8, wherein the fine fraction of diamond crystals ranges in size from about 1 to 25 μm.

11. (previously presented) The PCD compact of claim 8, wherein the cemented metal carbide support comprises a carbide of Group IVB, VB, or VIB metal, and the binder is one or more of cobalt, nickel, iron, or alloys thereof.

12. (previously presented) The PCD compact of claim 11, wherein the cemented metal carbide support is WC and the binder is Co.

13. (cancel)

14. (previously presented) The PCD compact of claim 8, wherein said compact is formed via a high pressure/high temperature (HP/HT) processing method, wherein the HP/HT processing method comprises sintering said body of diamond crystals and said support body for a sufficient period of time at a temperature of at least 1000° C and a pressure of at least 20 Kbar.

15. (previously presented) The PCD compact of claim 8, wherein said compact is formed via a high pressure/high temperature (HP/HT) processing method, and wherein said body of diamond crystals and said support body are pre-formed in an HP/HT processing environment for a sufficient period of time at a temperature of at least 1000° C and a pressure of at least 20 Kbar, prior to being fused together via brazing or in an HP/HT processing environment.